

Reconceptualizing the Foundations of Knowledge to Enhance the Pedagogic Goals of Environmental Education with Special Reference to the Three Gorges Dam Project

Ronald S. Laura and Dan Zhou

The University of Newcastle, Australia

Abstract. In this paper we shall argue that despite the protracted debate surrounding the TGP, there has been little chance of resolving the issues because the epistemological presumptions which give rise to the disparity in values-orientation underpinning the debate have remained elusive. Our goal here is to make explicit the epistemological dimensions of the debate which thus far have only been implicit. It is our view that the construction of the Three Gorges Dam (TGD) has been motivated by what Laura has called, ‘the epistemology of power’.

Understanding the socio-cultural evolution of technologized societies in both the East and the West involves making explicit a dominant epistemological tenet, namely, that ‘Knowledge is tantamount to Power’. From this it follows that the dominant conceptual approach to the technologization of nature and thus to dam construction is motivated by a particular theory of knowledge which is characterized by mankind’s obsession with power, dominance, subjugation and control. It is this obsession with power, dominance and control which gives rise to a covert moral tension between the political objectives of engineering pedagogy on the one hand and the moral purpose of environmental education on the other. We submit that the reliance on ‘power epistemology’ as the dominant model for technologization has created a scientific discourse which has marginalized the importance of the ethical issues surrounding the building of the dam and its long term utilization. Appreciation of this point makes it easier to discern why the noble efforts by some to think environmentally and in qualitative value terms about the Project have been severely marginalized and eventually superseded by technologically disposed instrumentalism.

Keywords: Three Gorges Dam Project, Epistemology of Power, Empathetic Education, Environmental Education, Reconceptualization

1. Introduction

In this paper we shall argue that despite the protracted debate surrounding the TGP, there has been little chance of resolving the issues because the epistemological presumptions which give rise to the disparity in values-orientation underpinning the debate have remained elusive. Our goal here is to make explicit the epistemological dimensions of the debate which thus far have only been implicit. It is our view that the construction of the Three Gorges Dam (TGD) has been motivated by what Laura has called, ‘the epistemology of power’ (for more detail on this concept, see *Empathetic Education*, by R.S. Laura and M. Cotton 1998 and *The New Social Disease*, by R.S. Laura et al 2010).

Understanding the socio-cultural evolution of technologized societies in both the East and the West involves making explicit a dominant epistemological tenet, namely, that ‘Knowledge is tantamount to Power’. From this it follows that the dominant conceptual approach to the technologization of nature and thus to dam construction is motivated by a particular theory of knowledge which is characterized by mankind’s obsession with power, dominance, subjugation and control. It is this obsession with power, dominance and control which gives rise to a covert moral tension between the political objectives of engineering pedagogy on the one hand and the moral purpose of environmental education on the other. We submit that the reliance on ‘power epistemology’ as the dominant model for technologization has created a scientific discourse which

has marginalised the importance of the ethical issues surrounding the building of the dam and its long term utilization. Appreciation of this point makes it easier to discern why the noble efforts by some to think environmentally and in qualitative value terms about the Project have been severely marginalised and eventually superseded by technologically disposed instrumentalism. Let us examine this point more closely.

2. Is Knowledge Value-Free?

According to the dominant epistemological paradigm, both knowledge and the technology which derives from it are value-free or neutral. The idea here is that technology, for example, is neither 'good' nor 'bad'; it is how people use technology which determines its moral status. This point is usually put euphemistically when it is said, 'Guns don't kill people- people kill people.' It is to be conceded that there is a truth in this way of looking at the matter, but our reluctance to accept the dominant paradigm unreservedly betrays a deep intuition that what is said it is not the whole truth and thus misleading.

To understand why we hold this view, it will be helpful to broaden the scope of the argument to include more than technology. After all, technology is essentially applied knowledge; so let us endeavour first to get a better sense of the relationship between knowledge and technology before passing a final judgement on the pros and cons of technologization. According to the dominant paradigm, knowledge is, in essence, the parent of technology and both knowledge and technology are what philosophers call value-neutral. Both knowledge and technology, so the argument goes, are value-free in the sense that neither of them is good nor bad in itself; it is the use of knowledge that is good or bad. Despite much intellectual propaganda designed to instil this view, we submit that there is an epistemological dimension of the problem that contradicts the conventional view that knowledge is value free.

Part of the problem is that the epistemology of power has encouraged the presumption that the empirical model of scientific knowledge has a monopoly on knowledge. Upon reflection, however, it is clear that there are many ways of 'knowing' which are not captured by the highly empiricist canons of science. In many cases, for example, the competitors to scientific knowledge are systematically denied a place on the winner's platform precisely because scientific knowledge has been given a priority in the West which has led to its establishment institutionally as the ultimate or only truly objective form of knowledge. Power epistemology has itself become the arbiter of what counts as knowledge. The epistemological intellectual imperialism of the West has in fact influenced the whole of the developed world to adopt the ideology of empiricism, and thus virtually all technologized cultures have been mesmerized by this one particular form of knowledge, as if it were the only form. Several assumptions are presupposed by this dominant epistemological framework, but to keep the paper within manageable bounds we shall focus on two.

1) Knowledge is neither good nor bad in itself. What determines the value of knowledge, on this view, is how it is used.

2) Technology which is in essence a form of 'applied knowledge' is thus assumed to be also value-neutral. It is what we do with technology that determines its value, so the argument goes.

Outside of its institutional monopoly and the vested structural interests which have been fostered to protect it, scientific knowledge is just one possible form of knowledge amongst many. Some philosophers would argue, for example, that moral sensibility – knowing what is right or wrong – cannot be generated from an epistemology of science which is determinately empiricist, being rigidly delimited by its quantitative calculus of testability (see, for example, *Empathetic Education* 1998, *The Paradigm Shift in Health* 2009 and *The New Social Disease* 2010 by R.S. Laura et al). Whatever the outcome of the debate on such matters, it is clear that the priority given to scientific knowledge is more a cultural phenomenon than a philosophically legislated truth. In eastern cultures different concepts of knowledge, for example, have been, and in some cases still are given a cultural priority akin to the status accorded to scientific knowledge in the West.

3. The Epistemology of Power

The point of these deliberations is to help us understand that the form of knowledge which has dominated in the West has been selected from amongst a range of possible forms of knowledge, and the

failure to recognize its limitations has led to an attitude of ‘epistemic arrogance’. Power epistemology occupies this special status because it encapsulates and enshrines a value, quite independent of its application, which reflects the materialist disposition of the western psyche more accurately than other aspirants to the epistemic crown. Of the many forms of knowledge available to the human mind, that is to say, the western world has chosen a form of knowledge which places a special priority on power and control of everything. This being so, the particular conception of knowledge preferred is conditioned by the preoccupation to dominate and control the destiny of every living and non-living thing on this planet. Similarly, the underlying rationale which motivates preferring one form of knowledge over another is the covert value expressed by this obsession with power. The insatiable appetite for and value we place on power encourages a way of relating to the world around us which leads inevitably to reordering the world and our relationships to everything in it in ways that suit our own ends and presumed interests, no matter how selfish or destructive those ends and interests are.

4. The Ideology of Power Epistemology

If the knowledge we transmit in our schools and by way of our institutions is conditioned and shaped by our obsession with power, both its form and application will reflect that obsession. If what we claim to know is covertly defined by the capacity of what is known to secure us the power to control and dominate, then the orthodox view that knowledge is neither good nor bad in itself can be exposed for the illusion it is. Far from being neutral, every piece of information which is accepted as knowledge is designed covertly to provide some advantage of control over everything that might affect our lives. In the light of the power presumption as a primary motivating factor in determining what we accept as knowledge, it is the contention of this paper that there is already a built-in or conceptually endogenous bias within educational epistemology in favour of the value of power and subjugation as the primary modalities of technological control. This being so, the conventional idea that what makes knowledge ‘good’ or ‘bad’ depends simply on how one uses it, betrays a conceptual distortion of a far subtler truth. Deeper reflection reveals that when knowledge is itself substantively defined by the preoccupation with power, technological innovation as a form of applied knowledge will by its very nature be shaped by the value placed on dominance and subjugation. This being so, every application of that form of knowledge will serve the aim of knowing, only in so far as it guarantees some measure of control. Our view is the price we pay for this measure of control is alienation, dehumanisation, depersonalisation and the ecological desacrilisation of nature. For whenever we apply this power-motivated theory of knowledge as a traditional innovation, the technology will transform the things to which it is applied into other things which are more readily controlled by virtue of the nature of the transformation. The direction of technological transformation in the name of predictability as the measure of power and control will involve reconstructing living or dynamic systems into chemicalised highly inert and lifelessly regimented ones. The impact of such transformations upon our world, upon our health and our spiritual and mental well-being has yet to be fully appreciated. The argument of this paper stands as a salutary reminder that we have as a culture inadvertently let our schools and many of our institutions become the state-sanctioned vehicles for the cultural transportation of an ideology of power and control enshrined as a fundamental value made manifest by the technological tools of our own creation.

5. Empathetic Epistemology and the Reconceptualization of Knowledge

Given the epistemology of power presumption, ethical consideration of the impacts of the TGP will lamentably be cosmetically utilitarian and thus marginalized and judged against the entrenched values hidden within the theory of knowledge on which it is built conceptually. This being so, the ethical issues never get a full hearing. Whenever ethical issues are in conflict with a power-based epistemology, the decisional outcome will reflect its bias in favour of the value of dominance and control. As Professor Laura reminds us in his book *Empathetic Education*, ‘moral sensibility requires affective empathy, and empathy is not a value enshrined within the epistemology of power because all values are inevitably subservient to the ultimate value of power, as the medium of control’. Given this epistemic paradox, we shall argue that Laura’s theory of ‘empathetic epistemology’ can be deployed to help reconceptualise the ways in which we come to know and thus relate to the world around us as a modality of ‘participatory consciousness’. Thus, every act of

knowing now enshrines the value of connecting with the world in such a way that the value of empathy defines our decisional outcomes. This in turn relates to defining the ways in which we choose to reconstruct the world to suit man's purposes.

With this new vision of knowledge as empathetically driven by what we call 'consciousness entanglement', the deeper moral issues associated with the TGP can no longer easily be marginalised, and certainly not eschewed.

In the final part of our paper we shall argue that one of the clearest examples of social injustice which results from the limitations of the epistemology of power relates not only to the ecological destruction caused by the dam on the one hand but also to the massive dislocation of the inhabitants of the dam areas, along with the decimation of their socio-cultural traditions and language dialects on the other.

To address these issues more effectively, and with a greater degree of moral or empathetic sensitivity, we shall now elaborate and extend Laura's theory of 'Empathetic Epistemology' as an alternative foundation to the 'epistemology of power'. Consistent with Laura's recent idea of entanglement epistemology, where he argues for a quantum model of the cosmos in which the world is defined by its indivisible and seamless interconnectivity. On this view living in empathetically connective relationships with the world is a fundamental condition of human well being and happiness. Indeed we suggest that all universal healing is ultimately self-healing and that all self-healing is ultimately universal healing.

The next question which emerges from this perspective is whether our technological interactions, be they massive or small, preserve the balance between progress on the one hand and moral sensibility on the other. In planning our technological goals, that is to say, to what extent do these plans reflect a deeper global consciousness of 'participatory connectivity', and our responsibility to delimit the parameters of engineering feasibility not so much by the measure of what is technologically possible, as by the measure of what is morally responsible. The question can now be asked, to what extent does the way in which we think about the world technologically presuppose the profound humanitarian significance of honouring it morally? This is what we have elsewhere called 'ecological honouring' (*Empathetic Education*, Laura & Cotton 1998).

6. Conclusion

We submit that reflection upon this new way of construing the world of nature may serve to provide an epistemic heuristic, a way, that is, of proposing hypotheses about the nature of knowledge which are much richer and more comprehensive than the traditional ones. In recognition that there may yet be better models for understanding nature, we can at least now see that the universe in which we live is one which depends upon its integrated unity for its cohesiveness. This being so, we suggest that a more comprehensive interpretation of environmental education is one which reflects not so much an epistemology of power as an epistemology of empathetic connectivity. It is our contention that by empathetically reconceptualizing the nature of the universe in which we live, it is possible to promote the aims of an environmental education which encourages an attitude of caring and participation towards the environment and indeed towards each other.

What the epistemology of connectivity requires, we urge, is the recognition that some types of technology are so potentially disruptive of the established harmony of nature that they should never be used. This would then become special relevance for the TGP debate. The issue for empathetic ecology then becomes a matter of developing forms of connectivity with maximize our participation in nature in ways that assist, not diminish our stewardship of it. Questions of the level of technological interaction with nature as balanced against the capacity of nature to replenish itself in the face of expropriation will still be critical, but there will also be a difference. Underpinning our unbridled commitment to the technologization of nature is an attitude of dominance and control many people find difficult to relinquish. The educational concept of knowledge as power carries with it the idea that through technology we can avoid having to confront the realization that it is the way we have chosen to live that needs changing even more than our technologies. We are obsessed with our technologies because they provide the promise that we can live lives of excess and indulgence without penalty as long as we have technologies which compensate for our own shortcomings. In

this regard our faith in technology is a faith in technology as a form of social salvation, and from a theological perspective, perhaps even personal salvation.

Empathetic epistemology, on the other hand, fosters a way of interacting with nature that reflects the deeper truth that the things of nature are here to be responsibly borrowed, so to say, but never owned and exploited in ways which contradict the principle of ecological honouring. The final consideration for empathetic ecology is that it obliges a radical revision of the idea of having a right to help ourselves to the resources of nature, an idea which is resolutely reinforced by a society committed to continued growth and expansion, grounded in an epistemology of power. Empathetic ecology, on the other hand, based upon 'empathetic epistemology' and the principle of ecological honouring which derives from it, recognize that the resources of nature have an intrinsic value in themselves and thus that the "rightness" of whatever we take needs to be balanced against cost inflicted upon the independencies of the form of nature we preserve. In the sense of ecological honouring, it is clear that the failing of the Three Gorges Project lies in mediates the values of power and dominance more vehemently than the values of empathy and compassion in the service of ecological honouring and humanism.

7. References

- [1] H. Longino. *Beyond "Bad Science": Sceptical Reflections on the Value-Freedom of Scientific Inquiry*. Science, Technology, & Human Values, Vol. 8, No. 1 (Winter, 1983), pp. 7-17 Accessed at November 28, 2011, <http://www.jstor.org/stable/688902>
- [2] P.K. Feyerabend. *Science in a Free Society*. London: N.L.B. 1978
- [3] K. Harris. *Education and Knowledge*. London: Routledge and Kegan Paul. 1979
- [4] J. Simonneaux and L.Simonneaux (2009). *Students' socio-scientific reasoning on controversies from the viewpoint of Education for Sustainable Development*. Cultural Studies of Science Education, vol. 4 (n° 3), pp. 657-687.
- [5] V.O. Quine. 'Two dogmas of Empiricism', *From a Logical Point of View*. Cambridge: Harvard University Press, p. 8, Y 2 ff, 1953.
- [6] J. Rifkin. *Time Wars: The Primary Conflict in Human History*. New York: Simon and Schuster, 1989
- [7] D. Zeidler. *Moral Issues and Social Policy in Science Education: Closing the Literacy Gap*. Science Education, Volume 68, Issue 4. 1983. Accessed at November 20, 2011, <http://onlinelibrary.wiley.com/doi/10.1002/sce.3730680406/pdf>
- [8] R. Sperry. *Science and Moral Priority*. New York: Columbia University Press, 1983.
- [9] C. Birch. *Regaining Compassion*. Sydney: NSW University Press, 1993.
- [10] T. Blake and P.Cock. *Environmentalism and education*. Australian Journal of Environmental Education, 3 (1), 1987.
- [11] L. Heshusius. *Freeing ourselves from objectivity: Managing subjectivity or turning toward a participatory mode of consciousness*. Educational Researcher, April, 1994.
- [12] D.Challman. *THE WHOLE DAM STORY: A Review of the China Yangtze Three Gorges Dam*. Accessed at December 20, 2007. http://www.caer.uky.edu/energeia/PDF/vol11_1.pdf
- [13] B. Czachor. *The Three Gorges Dam and the Influence of Globalization in Central China*. Accessed at December 21, 2007. http://dialogues.rutgers.edu/vol_03/pdf_files/b_czachor.pdf
- [14] G. Heggelund. *Resettlement Programmes and Environmental Capacity in the Three Gorges Dam Project*. Accessed at December 20, 2007. <http://www.fni.no/doc&pdf/gmh-dc-2006.pdf>
- [15] R.S, Laura & M.C. Cotton. *Empathetic Education*. London: Routledge, 1998
- [16] R. S. Laura & A. Chapman. *The Paradigm Shift in Health Towards a Quantum Understanding of the Role of Consciousness in Health Promotion and Education*. Maryland: University Press of America, 2009
- [17] R.S. Laura & M.C. Cotton. *The Social Disease*. London: Routledge, 2010
- [18] W.J. Lee. *The Environmental Impact of Large Scale Hydroelectric Development: Lessons from Three Gorges*, IEEE Energy Systems Research Centre, The University of Texas. Accessed at December 22, 2007, <http://ieeexplore.ieee.org/iel5/9451/30010/01373090.pdf?arnumber=1373090>

- [19] Y. Tan & F. Yao. *Three Gorges Project: Effects of resettlement on the environment in the reservoir area and countermeasures*. *Population and Environment* 27:351–371. 2006
- [20] S.D. Kolstø. *Science education for democratic citizenship through the use of the history of science*. *Sci & Educ* (2008) 17:977–997, 2008. Accessed at November04, 2011, <http://www.springerlink.com/content/u50714387773j337/fulltext.pdf>